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ABSTRACT

The effectiveness of various procedures in maintaining attendance at activities of residents at a geriatric facility was examined. A special, intermittently programmed or delayed consequence for attendance was added to regularly scheduled activities. Attendance at activities with and without the consequence was compared. Later, antecedent events which typically occurred prior to activities were suspended. These antecedent events were then re-instituted one at a time. Attendance at activities with and without antecedents was compared. It was found that the intermittently programmed and delayed consequences had little effect upon attendance. When the typically-occurring antecedent events were removed, attendance dropped markedly. One antecedent, staff encouragement, was more effective than the other two antecedents (calendars of events and announcements). Thus it may be concluded that, to maintain attendance at activities, staff at a geriatric facility should encourage residents to come to activities and offer to bring them; post large, easy to read calendars of events; and each day announce the activities which will be occurring on that day. Further research is needed to assess the effectiveness of intermittently programmed or delayed reinforcing consequences for attendance. (Author)

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ATTENDANCE AT ACTIVITIES WITH A GERIATRIC POPULATION: ANTECEDENTS AND CONSEQUENCES

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ATTENDANCE AT ACTIVITIES WITH A GERIATRIC POPULATION:

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Chapter 1

INTRODUCTION

Elderly adults' participation in social and leisure activities has been shown to enhance the elderly person's satisfaction with life (McAvoy, 1977) and decelerate the physiological degeneration processes associated with aging (Bonner, 1969; Comstock, Mayers, & Folsom, 1969). McClanahan and Risley's (1974) research indicated however, that at any given time during their waking hours most nursing home residents were in their own rooms, not engaging in social interactions and not exhibiting gross motor behavior. They also found that although staff may provide recreational opportunities, the resident may be unlikely to participate.

Applied behavior analysts have noted the problems involved in maintaining a desired level of active behavior in geriatric residents (Lindsley, 1964; McClannahan, 1973) and have suggested that studies be conducted to assess the

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Dr. Mary Ann Powers served as advisor for this thesis during the planning and implementation of the various phases.

The author is indebted to Betty McKinsey and Marci Wenlund who collected the data and carried out the various experimental phases. Their help made this study possible. The author also wishes to thank Rev. Frazer Thomason, Administrator of Ramsey Memorial Home, Des Moines, Iowa, for making subjects and facilities available.

effectiveness of manipulating certain readily accessible environmental variables in geriatric facilities. For example, McClannahan (1973) suggested that social interactions between geriatric residents might be increased through heterogeneous age groupings at activities or through the use of table games, and that attendance might be increased by scheduling hobby and craft activities or serving between-meal snacks. However, few empirical studies have been done to evaluate the effectiveness of the recommended experimental manipulations (McClannahan & Risley, 1975). The exceptions include the Blackman, Howe and Pinkston (1976) study in which social interactions among geriatric residents were increased by making juice and coffee available in the lounge area near the place where residents lined up for breakfast, and the McClannahan and Risley (1975) study which showed increased participation in games when staff placed table games into the hands of the geriatric residents.

A few studies have been conducted to assess the effectiveness of certain programmed consequences for social interactions or attendance at activities by elderly residents. For example, Mueller and Atlas (1972) found that social interactions among geriatric residents increased when contingent sweets, cigarettes and tokens were given, and Newkirk, Feldman, Bickett, Gipson and Lutzker (1976) found that attendance at activities in an extended care

facility increased when the names of those residents who attended activities were announced. The use of an exercise bicycle was also increased in three out of four hospitalized geriatric patients when contingent tokens, which could be exchanged for cigarettes, candy, chewing gum and peanuts at the end of the session, were given (Libb & Clements, 1969).

The effectiveness of manipulating certain antecedent events to activities for geriatric residents has also been examined in a few studies. McClannahan and Risley (1974) found that announcements on a public address system about upcoming activities, mealtime announcements and signs announcing activities were all equally effective in increasing attendance at an activity over the attendance level when no type of announcement was given.

The scheduled location of the activity may also affect attendance at activities, with a centrally located activity being better attended than a peripherally located one (Newkirk et al., 1976).

The studies previously mentioned have shown reinforcing consequences to be effective in modifying the behavior of geriatric individuals when the consequences were delivered to each individual that engaged in the desired activity (e.g. Blackman et al., 1976; Libb & Clements, 1969; Mueller & Atlas, 1972; Newkirk et al., 1976). The present study looked at the effect on attendance at activities in a

geriatric facility when the reinforcing consequences were given to only a few of the individuals who attended the activity. This was done in an attempt to reduce the costs (e.g. staff time and money for reinforcers) involved in changing resident behaviors. A previous study (Iwata, Bailey, Brown, Foshee & Alpern, 1976) had effectively changed staff behavior through the use of a lottery which was similar to the lottery used in the present study. The present study also compared the attendance of residents at regularly scheduled recreational activities when typically occurring antecedent events were present, to the attendance of residents when three of the typically occurring antecedent events were removed.

Chapter 2

METHOD

Subjects and Setting

The study was conducted in a residential care facility for elderly adults. The facility was located in a middle income neighborhood. During the study the residence was fully occupied. At any one time during the study, approximately 125 residents lived there.

The resident population ranged in age from 64 to 102 yr., with 86 to 90 yr. being the modal age group. Eighty-six percent of the residents were female. Thirty-seven percent of the residents were ambulatory without assistance, 25% used walkers or canes, 35% were confined to wheelchairs, and 3% were bedfast.

Definitions

Attendance. The recreation staff had been counting and recording attendance at activities for many months prior to the beginning of the present study. The data-collecting procedure which the recreation staff had been using to count and record attendance was used without change in this study. A resident was counted as being present at an activity if the resident was present at the place of an activity when the activity began and remained there after the activity started, or if the resident arrived at the place of the activity after it had started

and then remained there and participated. The recreation staff noted which residents attended each activity. After an activity was over, the number of residents who were present was recorded as the total attendance at that activity.

Activities. The recreation staff normally arranged one or two activities every day of the week for the residents. Some of these activities were scheduled regularly, at the same time on the same day of each week. Other activities occurred on an irregular basis. Examples of the irregularly occurring activities are: Halloween or Christmas parties, outings to community plays and musical performances. The present study included only the eight regularly scheduled activities which occurred Monday through Friday. These activities were:

Monday:	Views on News
Tuesday:	Discussion Hour
Wednesday:	Coffee Hour
	Discussion Hour
Thursday:	Choir Practice
	Literature Readings
Friday:	Crafts
	Ceramics

Two regularly scheduled activities were not included in this study. They were the Saturday Bible Studies and the Sunday Church Services.

Procedure

A. Three Antecedents (Weeks 1-3). During the first three weeks of the study, the recreation staff conducted activities as usual. This included providing three types of antecedent stimuli designed to increase attendance at activities:

1) Calendars of events. Monthly calendars of events were posted in various locations around the residence to help keep residents informed of coming activities. These calendars were large, colorful, and easy to read.

2) Announcements. Announcements about the activities which would be held during the day were made at meals and again just before an activity started.

3) Encouragement by the recreation staff. There were three ways in which the recreation staff encouraged residents to attend activities: a) recreation staff talked about activities coming up, sometimes beginning a few days before the activity was scheduled, to increase interest in and enthusiasm for the activities; b) recreation staff went around just prior to an activity and encouraged individual residents to attend; and c) recreation staff offered to bring residents to activities.

B. Three Antecedents Plus Unannounced Lottery (Weeks 4-5). During the Unannounced Lottery phase the three usual antecedent stimuli were present, plus residents were given a slip of paper with a number on it when they arrived

for an activity. A slip of paper with a matching number was placed in a container. At the end of the activity, a drawing was held. The resident with the winning number received a coupon which was worth 50¢ at the Mini-Shop, a small store located in the residence. No announcements were made ahead of time about the lottery.

C. Three Antecedents Plus Announced Lottery (Weeks 6-8). During the Announced Lottery phase the three usual antecedent stimuli were present, and the lottery continued to be done in the manner described for the Unannounced Lottery. In addition, during the Announced Lottery phase announcements were made ahead of time stating at which activities a drawing would be held. At mealtimes, these announcements were made by either a recreation staff person or a dining room staff person. Just prior to an activity, the announcements were made by the receptionist over an intercom system.

D. Three Antecedents (Weeks 9-10). The recreation staff conducted activities as described in A.

E. Three Antecedents Plus Italian Dinner Contest (Weeks 11-14). During this phase, the three usual antecedent stimuli were present. In addition, an announcement was made at the beginning of week eleven that there would be a special dinner put on at the end of the month. This dinner would include Italian cuisine, colored table cloths on the tables, dressed-up waitresses and a strolling violin

player. The twelve residents who attended the most activities and the four residents who showed the greatest increase in their attendance at activities during the month could attend the dinner.

F. Three Antecedents (Weeks 15-16). The recreational staff conducted activities as described above in A.

G. Suspension (Week 17). This phase involved eliminating the three types of antecedent stimuli which were usually provided by the recreation staff and which were mentioned in A (Calendars, Announcements, Staff Encouragement). The calendars of events were taken down. No announcements were made about the regularly scheduled activities. No encouragement was given from the recreation staff for residents to attend activities. Thus, the recreation staff did not "talk up" an activity ahead of time to increase interest in and enthusiasm for the activity. Recreation staff only talked about activities if a resident asked about them and then answered only the questions asked. Recreation staff did not go around just prior to an activity and encourage individuals to attend. A resident was not brought to an activity by recreation staff unless the resident initiated the request to be brought.

At the time and place regularly scheduled for the activity, the recreation staff began the activity with whomever was there. The number of residents present was then recorded as usual.

H. One Antecedent - Calendars (Week 18). At the beginning of week 18 those large, colorful, easy to read monthly calendars of events were again posted in their usual places. However, no announcements were made about the regularly scheduled activities and no staff encouragement was given for resident attendance at activities. Activities were conducted at the regular time and place.

I. Two Antecedents - Calendars and Announcements (Week 19). Beginning with this phase, announcements were again made about regularly scheduled activities at meals and just prior to when an activity was scheduled to begin. The calendars of events remained posted. However, still no recreation staff encouragement was given for resident attendance at activities. Activities were conducted at the regular times and places.

J. Three Antecedents (Weeks 20-24). Beginning with week 20, recreation staff again encouraged residents to attend activities, as described above in A. Calendars remained posted and announcements continued to be made. With this phase, all the typical antecedent stimuli which had been suspended in week 17 were again in operation.

Interobserver Agreement

Interobserver agreement on attendance was checked once per week during 14 of the 24 weeks in the study. During these checks the experimenter was present at an activity and counted the number of residents present. The

count obtained by the experimenter was then compared to the count obtained by the recreation staff. Interobserver agreement was calculated by dividing the experimenter's count by the recreation staff's count. Interobserver agreement was 100% for 12 of the 14 checks. For the other two checks interobserver agreement was 95% and 96%.

Chapter 3

RESULTS

The mean weekly attendance of residents at regularly scheduled activities in the facility, excluding the Wednesday Coffee Hour, is plotted across weeks in Figure 1. The Coffee Hour data are excluded since the staff did not consistently apply the experimental procedures in regard to this activity. For example, the Unannounced and Announced Lotteries were never held at the Coffee Hour and an announcement of the forthcoming Coffee Hour was given when all antecedent events were to have been suspended (Week 17).

During the first three weeks of the study, when all regular antecedent events were in use and no programmed consequences had yet been added, mean weekly attendance dropped steadily from 24.5 to 15.5 to 13.5. The unusually high mean attendance of week 1 has been discussed with the recreation staff at the residence and no explanation can be offered. The Unannounced Lottery (Weeks 4 and 5) seemed to have no effect upon mean attendance since the Unannounced Lottery yielded two nearly equal means of attendance (15.7 and 15.4). The Announced Lottery (Weeks 6, 7 and 8) introduced both a new antecedent event (the announcement of the lottery) and a new consequence for attending (a chance to receive the number which would win in the lottery). The Announced Lottery resulted in a small but steady increase

Figure 1. Mean weekly attendance per activity at regularly scheduled activities (Coffee Hour data excluded).

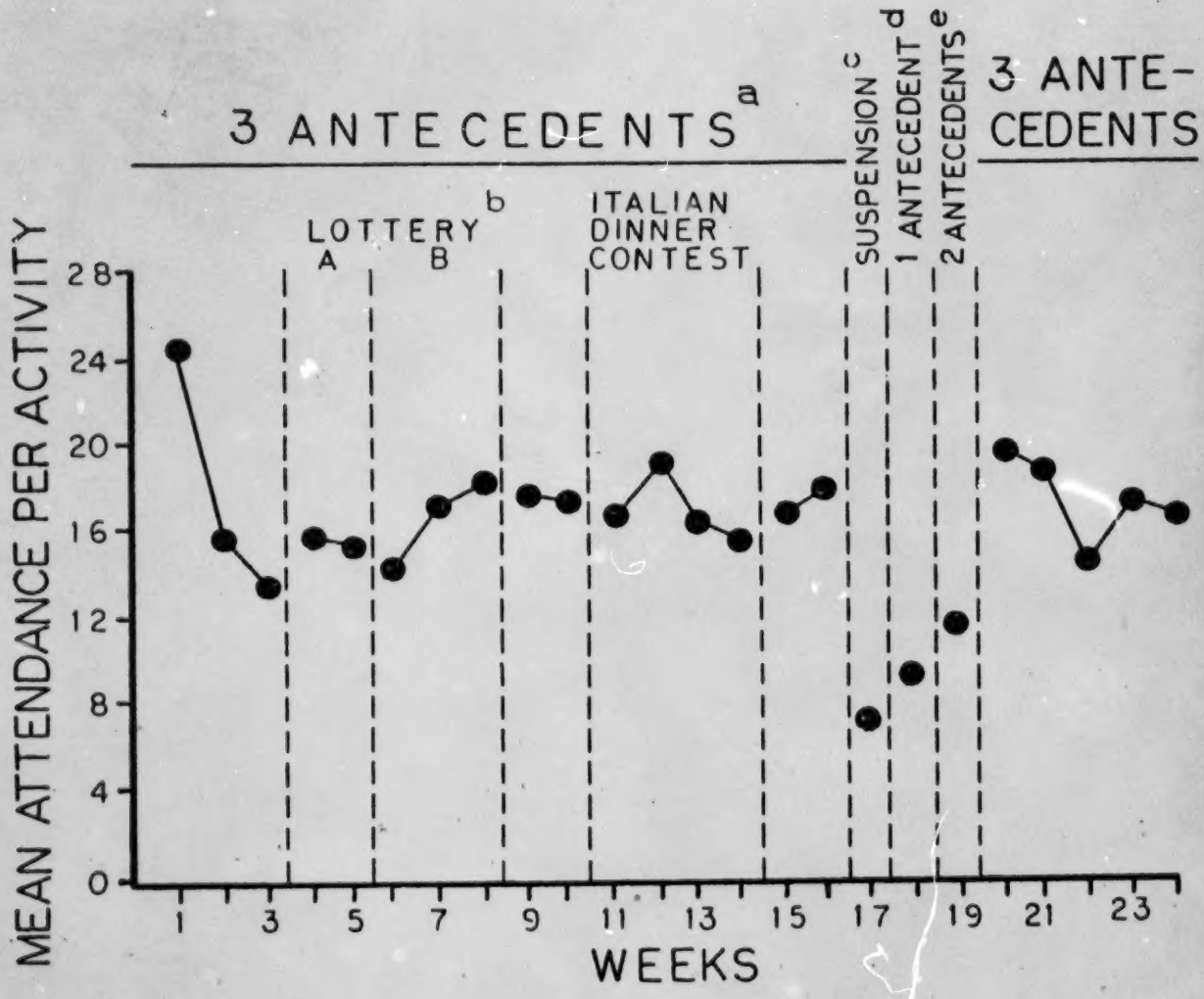
[a]Calendars, Announcements and Staff Encouragement.

[b]Lottery A: Unannounced; Lottery B: Announced.

[c]Suspension of Calendars, Announcements and Staff Encouragement.

[d]Calendars.

[e]Calendars and Announcements.


3 ANTECEDENTS[a]
3 ANTE-CEDENTS[a]
LOTTERY[b]
A
B
ITALIAN DINNER CONTEST
SUSPENSION[c]
1 ANTECEDENT[d]
2 ANTECEDENTS[e]
MEAN ATTENDANCE PER ACTIVITY
0
4
8
12
16
20
24
28
1
3
5
7
9
11
13
15
17
19
21
23
WEEKS

in attendance, with weekly means going from 14.3 to 17.3 to 18.4. However, when the Announced Lottery was terminated the attendance remained at approximately the same level, with means of 17.8 and 17.6.

In the first week of the Italian Dinner Contest (Week 11), mean attendance was 16.8. In the second week of the Contest, mean attendance increased to 19.4. But mean attendance then dropped to 16.6 and then 15.7. During the two weeks following termination of the Italian Dinner Contest (Weeks 15 and 16), mean attendance increased slightly to 17.0 and then 18.1.

When the three typically occurring antecedent events were removed during week 17, mean attendance dropped markedly. Mean weekly attendance was 7.5 for week 17, which is less than half of what it had been during the two preceding weeks when the three typically occurring antecedent events were present. As calendars and then announcements were again used in weeks 18 and 19, mean weekly attendance increased steadily, to means of 9.5 and 11.8. It is notable that from week 17 to week 19 there was a linear increase in mean weekly attendance. When the third antecedent event, staff encouragement, was reinstituted in week 20, mean weekly attendance increased abruptly to 19.8. Mean weekly attendance in week 21 decreased slightly to 19.0. Then in week 22 the decrease was larger, with mean weekly attendance dropping to 14.7. But in week 23 mean attendance increased

again to 17.6, and in week 24 mean weekly attendance was 17.0.

The weekly attendance at six regularly scheduled activities is represented in Figure 2, with the weekly attendance at the remaining two regularly scheduled activities represented in Figure 3. There was a drop in attendance at all activities held during week 17 when the three antecedent events were suspended. The drop was particularly noticeable in the top three activities: the Monday Views on News (from an attendance of 19 in the preceding week to an attendance of 7 when antecedent events were suspended), Tuesday Discussion (from 18 to 6), and Thursday Reading (from 21 to 8). The drop in attendance was also quite noticeable (from 25 to 6) for the Wednesday Discussion (represented in Figure 3). Thursday Choir (Figure 2) was not held during weeks 17, 18 or 19 due to the absence of the choir director or the pianist. The decrease in attendance was less marked for Friday Crafts and Friday Ceramics (Figure 2) than it had been for the other activities. The drop in attendance for Friday Crafts was from 17 to 10 and for Friday Ceramics it was from 12 to 8.

Figure 3 provides a comparison of the weekly attendance at the Wednesday Coffee Hour (which without exception had the largest weekly attendance of any regularly scheduled activity), with the weekly attendance at the Wednesday

Figure 2. Weekly attendance at six regularly scheduled activities.

[a]Calendars, Announcements and Staff Encouragement.

[b]Lottery A: Unannounced; Lottery B: Announced.

[c]Suspension of Calendars, Announcements and Staff Encouragement.

[d]Calendars.

[e]Calendars and Announcements.

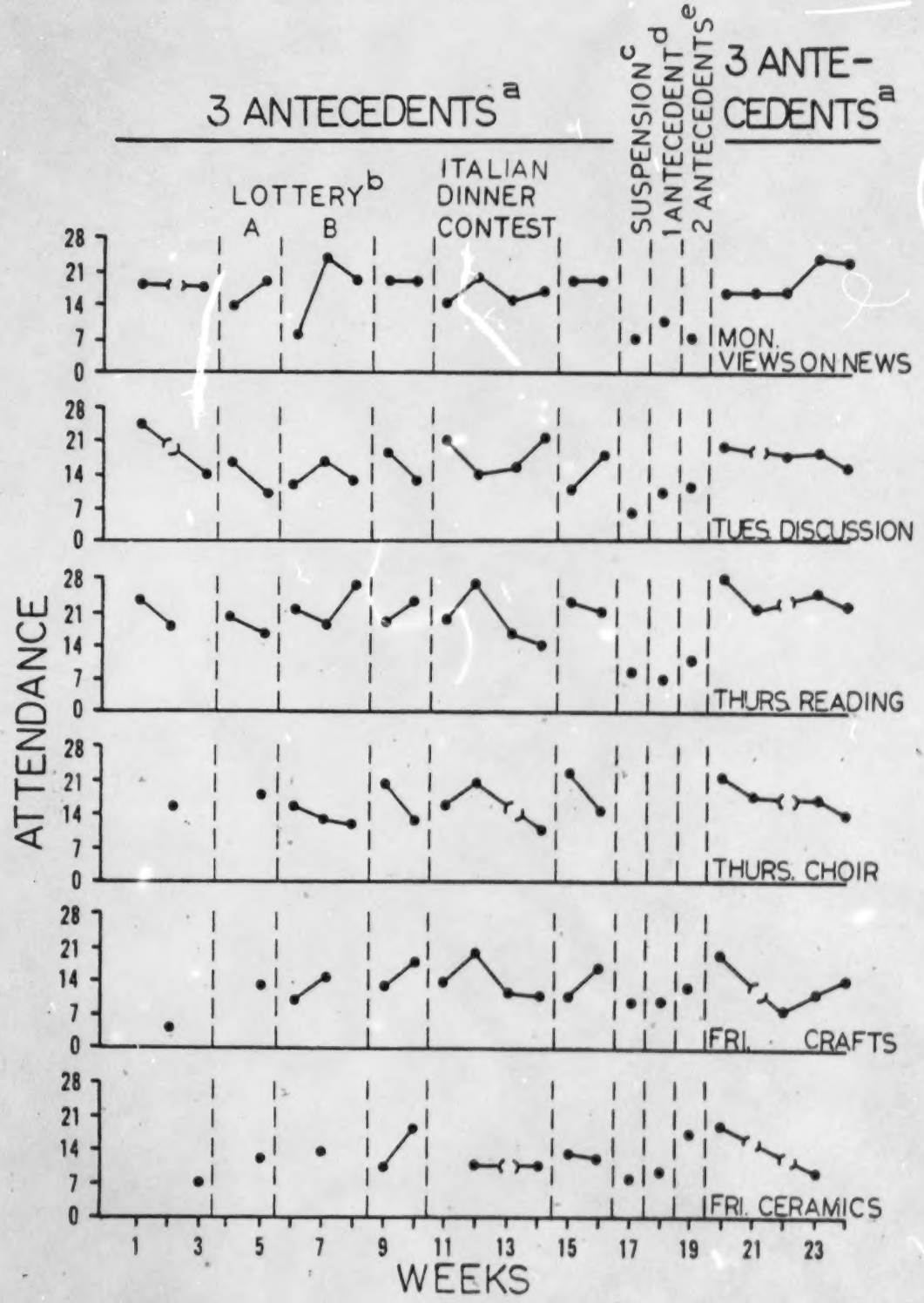

3 ANTECEDENTS[a]
3 ANTE-CEDENTS[a]
LOTTERY[b]
A
B
ITALIAN DINNER CONTEST
SUSPENSION[c]
1 ANTECEDENT[d]
2 ANTECEDENTS[e]
ATTENDANCE
28
21
14
7
0
MON. VIEWS ON NEWS
TUES. DISCUSSION
THURS. READING
THURS. CHOIR
FRI. CRAFTS
FRI. CERAMICS
1
3
5
7
9
11
13
15
17
19
21
23
WEEKS

Figure 3. Attendance and mean weekly attendance at regularly scheduled activities.

☆—☆ Attendance at Wednesday Coffee Hour.

★—★ Attendance at Wednesday Coffee Hour; no Lottery was held.

✪ Was announced when announcements were to have been suspended.

○—○ Attendance at Wednesday Discussion.

□..□ Mean attendance of six regularly scheduled activities:

Monday Views on News
Tuesday Discussion
Thursday Reading
Thursday Choir
Friday Crafts
Friday Ceramics

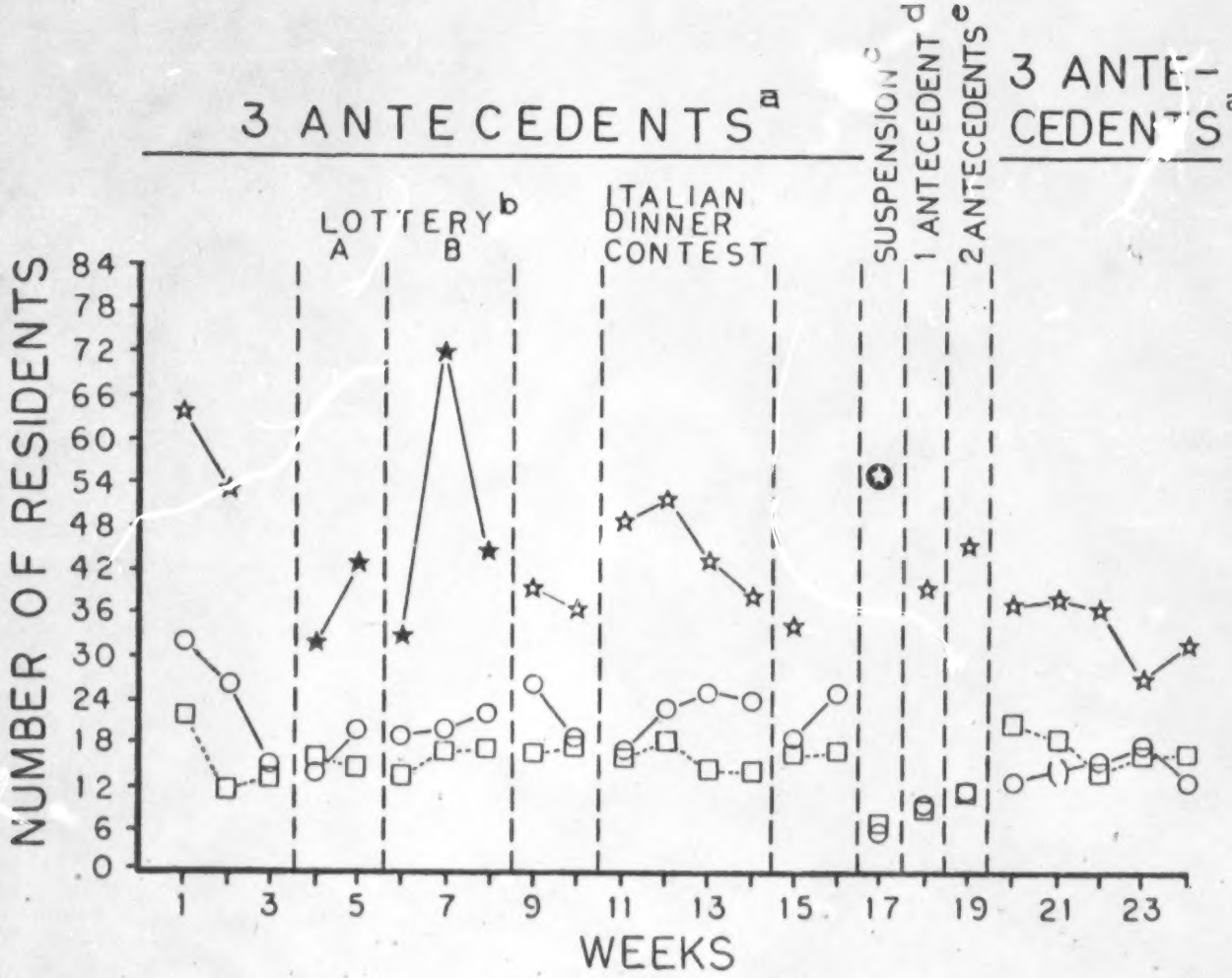
[a]Calendars, Announcements and Staff Encouragement.

[b]Lottery A: Unannounced; Lottery B: Announced.

[c]Suspension of Calendars, Announcements and Staff Encouragement.

[d]Calendars.

[e]Calendars and Announcements.


3 ANTECEDENTS[a]
3 ANTE-
CEDENTS[a]
LOTTERY[b]
A
B
ITALIAN
DINNER
CONTEST
SUSPENSION[c]
1 ANTECEDENT[d]
2 ANTECEDENTS[e]
NUMBER OF RESIDENTS
0
6
12
18
24
30
36
42
48
54
60
66
72
78
84
1
3
5
7
9
11
13
15
17
19
21
23
WEEKS

Discussion (which occurred immediately after the Coffee Hour and usually had the second largest weekly attendance) and with the mean weekly attendance of all other regularly scheduled activities. The range of attendance at the Coffee Hour was 32 to 72, except for week 23 when attendance dropped to 28. At the Coffee Hour, residents socialized with each other and ate refreshments which had been prepared for the event. Attendance at the Wednesday Discussion had a range of 14 to 32 for the first 16 weeks, when the typical antecedent events were present. During those 16 weeks the attendance at the Wednesday Discussion was higher than the mean of the attendance at the other six regularly scheduled activities for all but two of the weeks, week 4 and week 11. After week 17 when the three antecedent events were suspended and attendance at the Wednesday Discussion dropped to 6, the Wednesday Discussion attendance increased gradually week by week to 18 in week 23. However, after week 17 attendance at the Wednesday Discussion tended to remain close to, or lower than, the mean attendance of six of the regularly scheduled activities, rather than again becoming noticeably higher than the mean as it had been during most of the first 16 weeks.

With approximately 125 residents involved in the study, a mean weekly attendance per activity of less than 20 might leave the impression that very few residents took part in the regularly scheduled activities. However, the

individual residents who attended an activity (either regularly scheduled or not) varied from day to day. Thus, the percentages of residents that attended at least one activity during each of the four weeks preceding the beginning of this study were successively: 82%, 72%, 56% and 86%. In fact, ninety-five percent of the residents attended at least one activity during the month.

Chapter 4

DISCUSSION

The programmed consequences for attendance at activities which were used in this study (i.e. 50¢ gift certificates and the Italian dinner) were expected to be effective reinforcers for geriatric populations. Certificates had been used contingently in an individualized program at the geriatric facility to successfully increase attendance at activities for one resident, and one of the staff persons working at the facility had anecdotally reported that an Italian dinner had been effectively used to increase attendance at activities in another geriatric facility.

However, in the present study the programmed consequences had a minimal effect on increasing attendance at regularly scheduled activities. This may be due to the fact that although all residents in the present study who attended an activity during the Lottery and Italian Dinner phases were given a chance at receiving the back-up reinforcer (e.g. the gift certificate or the dinner) only a few residents actually did receive the back-up reinforcers. During the Lottery phases, for example, only one of the residents who attended an activity on a given day actually received the gift certificate. For the Italian Dinner Contest, only a limited number (16) of the residents who attended activities during the month were eligible to

participate in the dinner at the end of the month. In other studies for which programmed consequences have been found effective in increasing attendance, each subject who attended an event has received the reinforcer. But in this study, even a resident who attended the activities frequently could only receive the programmed consequence occasionally. Furthermore, the design of the study did not permit the assessment of the reinforcing effects of the Italian Dinner Contest since the dinner was given only once. Since the residents did not have the opportunity to earn this back-up reinforcer again, the reinforcing effects of the dinner on the residents who attended were not measurable.

The effectiveness of antecedent events for maintaining resident attendance at activities in this study is consistent with findings reported by McClannahan and Risley (1974; 1975) and by Blackman et al. (1976). McClannahan and Risley (1974) found that "failure to announce activities resulted in more than 50% reductions in attendance levels." In the present study discontinuing announcements, staff encouragement and staff offering to bring the residents also resulted in a more than 50% reduction in attendance at activities. McClannahan and Risley (1975) found that the staff prompts of placing games in the hands of residents were effective for increasing attendance levels. The present study found that staff encouragement not only

increased attendance at activities but also had a much larger effect upon attendance than did calendars, announcements, or both calendars and announcements combined. The linear increase in mean weekly attendance from week 17 through weeks 18 and 19 (when calendars and then announcements were added) is consistent with the findings of McClannahan and Risley (1974) that announcements and signs are equally effective for increasing attendance at activities.

Perhaps antecedent stimuli are important in maintaining attendance at activities with a geriatric population because the problem is often not to develop new behaviors but rather, as Blackman et al. (1976) mention, to re-establish "behaviors which were once, but are no longer, present in their current repertoires." Thus, providing an elderly person with appropriate stimuli would be a very important step towards eliciting desirable, previously learned, social behaviors.

McClannahan and Risley (1975) reported that residents in a nursing home were more likely to engage in a "food-related" activity than any other type of activity measured in their study. Blackman et al. (1976) also noted the importance of food-related activities in increasing social interactions at activities. The results of the present study are consistent with both of those studies. The Wednesday Coffee Hour, which included coffee and other

refreshments, was by far the most attended regularly scheduled event of the week. It is also interesting to note that the second-most attended regularly scheduled activity (Wednesday Discussion) was the event which immediately followed the Wednesday Coffee Hour. This increase in attendance extends the Blackman et al. (1976) finding that simply making refreshments available in the area of a scheduled activity may increase social interactions of those attending. It may also increase the number of those who attend.

This study suggests that to maintain attendance at activities in geriatric facilities staff should a) encourage residents to come to the activities and offer to bring them, b) post large, easy to read calendars of events, and c) announce each day the activities which will be occurring on that day. This study also suggests that having refreshments available in an area where an activity occurs may increase attendance at the activity.

Further research is needed to assess the effectiveness of intermittently programmed or delayed reinforcing consequences for attendance. When the Announced Lottery was terminated in this study, a gradual increase in mean attendance had been occurring for three weeks. A study which continued the Lottery procedure for a longer period of time might show a continued increase in attendance from week to week. Another study might look at the effects on

attendance of a variation of the lottery approach in which gift certificates or other back-up reinforcers would be intermittently awarded to all residents who attended an activity. Whether or not a special dinner would function as a reinforcer for attendance at activities might be indicated by a study in which a special dinner would be repeatedly used as a consequence for attendance at activities.

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